

WHAT IS CLAIMED IS:

1. A traffic forwarding method in an asynchronous transfer mode (ATM) based multi-protocol label switching (MPLS) system, comprising:
 - classifying by rate, traffic inputted to an egress through at least one channel;
 - acquiring a total of channel bandwidths of ATM traffic of the inputted traffic corresponding to at least one setup rate; and
 - forwarding the ATM traffic corresponding to the setup rate through a single channel having the acquired bandwidth.
2. The traffic forwarding method of claim 1, further comprising forwarding MPLS traffic of the inputted traffic by subscriber channel according to a priority of the classified rate.
3. The traffic forwarding method of claim 2, further comprising the steps of:
 - performing processing on a second layer of the forwarded traffic; and
 - matching the processed traffic to a physical layer.
4. The traffic forwarding method of claim 1, wherein the rate includes constant bit rate (CBR), real-time variable bit rate (RT-VBR), (NRT-VBR), and unspecified bit rate (UBR), in hierarchical order.

5. The traffic forwarding method of claim 4, wherein the setup rate includes CBR, RT-VBR, and NRT-VBR rates.
6. The traffic forwarding method of claim 1, wherein the ATM traffic corresponding to the setup rate is real-time traffic.
7. A traffic forwarding method in an asynchronous transfer mode (ATM) based multi-protocol label switching (MPLS) system, comprising:
 - classifying ATM traffic of traffic inputted to an egress through at least one channel, into non-unspecified bit rate (UBR) traffic and UBR traffic;
 - finding a total of channel bandwidths assigned to the classified non-UBR traffic; and
 - forwarding the classified non-UBR traffic through a single channel having a bandwidth amounting to the found total.

8. The traffic forwarding method of claim 7, further comprising:
 - classifying MPLS traffic of the inputted traffic by rate; and
 - forwarding the MPLS traffic by channel according to a priority of the classified rate.

9. The traffic forwarding method of claim 8, further comprising:
 - performing processing on a second layer of the forwarded traffic; and
 - matching the processed traffic to a physical layer.
10. The traffic forwarding method of claim 8, wherein the rate includes constant bit rate (CBR), real-time variable rate (RT-VBR), non-real-time variable bit rate (NRT-VBR), and unspecified bit rate (UBR), in hierarchical order.
11. The traffic forwarding method of claim 10, wherein ATM traffic of the non-UBR rate is forwarded with a same priority as the MPLS traffic of the CBR rate.
12. The traffic forwarding method of claim 11, wherein the ATM traffic of the non-UBR rate and the MPLS traffic of the CBR rate are forwarded by a round robin method when simultaneously inputted.
13. A traffic forwarding apparatus in an asynchronous transfer mode (ATM) based multi-protocol label switching (MPLS) system, comprising:
 - a traffic rate classifying unit classifying traffic inputted to an egress by rate, wherein ATM traffic of the inputted traffic is classified into a non-unspecified bit rate (UBR) traffic rate and a UBR traffic rate, and wherein MPLS traffic of the inputted traffic are classified into constant bit rate (CBR), real-time variable bit rate (RT-VBR), non-real-time variable bit rate (NRT-VBR), and unspecified bit rate (UBR), in hierarchical order;

a traffic storing unit comprising an ATM traffic storing unit having a first buffer buffering the ATM traffic corresponding to the non-UBR rate and a second buffer buffering the ATM traffic corresponding to the UBR rate and an MPLS traffic storing unit having a plurality of buffers buffering the MPLS traffic by classified rate and by channel; and a scheduler forwarding traffic stored in the traffic storing unit according to a priority of each of the classified rates.

14. The traffic forwarding apparatus of claim 13, wherein the non-UBR traffic rate includes CBR, RT-VBR rate, and NRT-VR rates.

15. The traffic forwarding apparatus of claim 13, wherein the scheduler forwards the ATM traffic of the non-UBR rate stored in the first buffer unit with the same priority of the MPLS traffic of the CBR rate.

16. The traffic forwarding apparatus of claim 13, wherein the scheduler finds a total of channel bandwidths of the ATM traffic corresponding to the non-UBR rate and forwards the ATM traffic stored in the first buffer unit through a single channel having a bandwidth amounting to the found total.

17. The traffic forwarding apparatus of claim 13, further comprising:
an ATM processing unit performing processing on a second layer of the forwarded traffic; and

a physical layer matching unit matching the processed traffic to a physical layer.

18. A traffic forwarding method, comprising:

classifying inputted traffic by a classification rate;

acquiring a total channel bandwidth of asynchronous transfer mode traffic corresponding to at least one setup rate; and

forwarding the asynchronous transfer mode traffic corresponding to the setup rate;

wherein said forwarding the asynchronous transfer mode traffic occurs through a single channel having said acquired bandwidth.

19. The traffic forwarding method of claim 18, further comprising:

forwarding multi-protocol label switching traffic by subscriber channel;

performing processing on a second layer of said forwarded traffic; and

matching said processed traffic to a physical layer;

wherein said forwarding multi-protocol label switching traffic occurs according to a priority of the classification rate.

20. The traffic forwarding method of claim 18, wherein the classification rate includes a constant bit rate, a real-time variable bit rate, a non-real-time variable bit rate, and an unspecified bit rate, in hierarchical order.

21. The traffic forwarding method of claim 19, wherein the classification rate includes a constant bit rate, a real-time variable bit rate, a non-real-time variable bit rate, and an unspecified bit rate, in hierarchical order.

22. The traffic forwarding method of claim 18, wherein the setup rate includes a constant bit rate, a real-time variable bit rate, and a non-real-time variable bit rate.

23. The traffic forwarding method of claim 22, wherein the setup rate is real-time traffic.

24. A traffic forwarding apparatus, comprising:
a traffic rate classifying unit;
a traffic storing unit; and
a scheduler;
wherein said traffic rate classifying unit classifies asynchronous transfer mode traffic by unspecified bit rate and non-unspecified bit rate.

25. The traffic forwarding apparatus of claim 24, wherein said traffic storing unit further comprises:
an asynchronous transfer mode traffic storing unit; and
a multi-protocol label switching traffic storing unit.

26. The traffic forwarding apparatus of claim 25, wherein said asynchronous transfer mode traffic storing unit further comprises:

 a first buffer buffering asynchronous transfer mode traffic corresponding to the non-unspecified bit rate; and

 a second buffer buffering asynchronous transfer mode traffic corresponding to the unspecified bit rate.

27. The traffic forwarding apparatus of claim 25, wherein said multi-protocol label switching traffic storing unit further comprises a plurality of buffers buffering multi-protocol label switching traffic by a classification rate and by channel.

28. The traffic forwarding apparatus of claim 24, wherein said traffic rate classifying unit classifies multi-protocol label switching traffic by constant bit rate, real-time variable bit rate, non-real-time variable bit rate, and unspecified bit rate.

29. The traffic forwarding apparatus of claim 24, wherein said scheduler forwards traffic stored in said traffic storing unit according to a priority of each of a classified rate.

30. The traffic forwarding apparatus of claim 24, further comprising:

 an asynchronous transfer mode processing unit performing processing on a second layer of forwarded traffic; and

 a physical layer matching unit matching processed traffic to a physical layer.

31. The traffic forwarding apparatus of claim 28, wherein said asynchronous transfer mode traffic storing unit further comprises:

a first buffer buffering asynchronous transfer mode traffic corresponding to the non-unspecified bit rate; and

a second buffer buffering asynchronous transfer mode traffic corresponding to the unspecified bit rate.

32. The traffic forwarding apparatus of claim 31, wherein said scheduler forwards asynchronous transfer mode traffic of the non-unspecified bit rate stored in said first buffer with the same priority of the multi-protocol label switching traffic of constant bit rate, finds a total channel bandwidth of asynchronous transfer mode traffic corresponding to non-unspecified bit rate, and forwards the asynchronous transfer mode traffic stored in said first buffer through a single channel having a bandwidth equal to the total channel bandwidth.